

New Research From Psychological Science

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Read about the latest research published in *Psychological Science*:

[The Emotional-Ambiguity Hypothesis: A Large-Scale Test](#)

C. J. Brainerd

Valence (positive vs. negative) and arousal (calming vs. exciting) are core dimensions of emotion, but their relationship is not well understood. Brainerd tested the emotional-ambiguity hypothesis, in which valence ambiguity (the degree of uncertainty in people's valence evaluation of an item or event) controls the relationship between valence and arousal. Using three databases of emotional words and three databases of emotional pictures, he calculated how the correlation between valence and arousal changed for different levels of valence ambiguity, measured by the standard deviations of valence ratings for each item (i.e., items with larger standard deviations are considered more ambiguous because they elicit a wider range of valence ratings). Analysis showed that words and pictures that elicited more defined valence perceptions had high arousal ratings, and those that drew ambiguous valence evaluations had lower arousal ratings, independent of positive or negative valence. These results indicate that valence ambiguity determines the strength of the valence-arousal link, supporting the emotional-ambiguity hypothesis. Thus, valence standard deviations might be used to control arousal confounds in experiments that manipulate valence.

[Self-Affirmation Effects Are Produced by School Context, Student Engagement With the Intervention, and Time: Lessons From a District-Wide Implementation](#)

Geoffrey D. Borman, Jeffrey Grigg, Christopher S. Rozek, Paul Hanselman, and Nathaniel A. Dewey

Borman and colleagues used data from a randomized controlled trial in an urban school area to investigate the effects of self-affirmation on the academic performance of students in stigmatized groups. During the school year, seventh graders completed up to four writing exercises about two or three important personal values (self-affirmation condition) or about unimportant values (control condition). The researchers designated Black and Hispanic students as potentially more vulnerable to

stereotype threat (performing below expectations because of stereotypes about the abilities of one's racial, ethnic, gender, or cultural group), and tracked their academic performance for 3 years. Results showed that the self-affirmation exercises bolstered the students' academic performance, even after 3 years. These benefits were more pronounced in schools in which Black and Hispanic students were a small minority and had lower academic standing but also when students were more engaged with the exercise, discussing a value in terms of its importance to them. These results suggest that self-affirmation effectively reduced the growth of the racial achievement gap usually seen across the high school transition but that these effects depend both on context, such as school environment, and on individual factors, such as engagement with self-affirmation.

Calculation Efficiencies for Mean Numerosity

Joshua A. Solomon and Michael J. Morgan

How efficiently can people compare the textures of visual displays on the basis of the number of elements and their distributions? Solomon and Morgan presented pairs of visual stimuli, each one divided into 16 sectors. Each sector contained between zero and four elements (dots). Participants were asked to indicate which of the two stimuli had the greater average number of dots per occupied sector. The two stimuli either had the same number of sectors with dots (four or eight sectors) or unequal numbers of sectors with dots (i.e., one had four and the other had eight). Results showed that observers identified the stimulus with the greater average number of dots just as accurately when the stimuli had the same number of sectors occupied by dots as when they did not. However, observers were not efficient in this task, especially when there were eight occupied sectors in at least one of the stimuli. In sum, observers can discriminate local density, independently of the number of sectors in a visual display, and Solomon and Morgan argue that traditional numerosity discriminations are also based on small numbers of element clusters.